

Dear Andy:

The Origins Subcommittee met on November 9 and 10 in College Park, Maryland. Much of the meeting was held in joint session with the Structure and Evolution of the Universe Subcommittee.

Anne Kinney briefed the joint Subcommittees on the status of the Universe program. With HST, Spitzer, Chandra and many smaller missions producing exciting science, we are in the midst of a very exciting time for astrophysics.

Marc Allen reviewed the new plans for roadmapping. As NASA restructures its plans, we are all eager to provide useful input in the most effective form.

TECHNOLOGY

We are very concerned that the disappearance of Aerospace Technology funding within NASA will further exacerbate the problem of developing mid-TRL technologies for Universe Division missions. New detectors, optics, cryocoolers, etc. are needed to implement Origins Probes, Visions Missions, and near-term balloon payloads, explorers, and future SOFIA instruments. Mel Montemerlo put together a very good plan that documents many of these needs and many of the technologies that will be essential to future astronomical missions. The Origins Subcommittee advocates that the Universe Division to outline a plan for bridging this technology funding gap and develop a strategy for long-term technology funding. We request that this plan include new opportunities for high priority technologies in the near future (FY05) and that it be presented at the next meeting with as many details as possible.

DSN

Barry Geldzhaler briefed the Origins Subcommittee on plans for upgrading the Deep Space Network. The next generation DSN will have significantly higher bandwidth. For many of the planned OS missions, low operations costs and dependability will be as important as high bandwidth. We recommend that the SscAC review the plans of the DSN to assure that they are matched to the strategic needs of NASA science.

JWST Ariane Launch

As we discussed in our previous report, the James Webb Space Telescope—the top priority in the Astronomy Decadal Survey and a vital tool in our efforts to explore the universe—continues to face a significant financial and schedule risk. As part of its contribution to the construction and launch of JWST, ESA has agreed to provide an Ariane V launch at no cost to NASA. Unfortunately, the interagency process required for this approval has not moved forward. If this launch plan is slipped or abandoned, the cost of JWST will grow significantly and NASA’s relationship with ESA will be damaged at a time when (according to the President's Vision and the Aldridge Commission report) international cooperation is very important for the success of the Space Exploration Initiative. **We recommend that the SscAC asks the Science Mission Directorate (SMD) to aggressively seek interagency approval for the Ariane launch for JWST as a near-term high priority activity.**

TPF-C

The rapid advances in the development of TPF-C have been one of the exciting developments within the Origins program. Since TPF-C is now scheduled to launch several years ahead of TPF-I, we encourage NASA to make its funding the top priority within the TPF program. **We have several specific recommendations for the TPF-C program: (1) the new STDT be a balanced committee with a significant representation of general astrophysicists; (2) the TPF project work to maximize community involvement by supporting multiple instrument options and groups, and (3) we encourage the TPF project to compete the starlight suppression system in TPF-C.**

HST

Jennifer Wiseman and Colonel M. Borkowski briefed the Origins Committee on progress on the Hubble robotic mission. The planned mission is a very ambitious program and would represent a major advance in robotics. We are concerned that the process of evaluating the costs and science return of the various HST refurbishments options and are also concerned about the impacts of these costs on other parts of the Origins program. We are eager to maximize community involvement in evaluating these trade-offs.

Balloons

Martin Israel briefed the joint Origins/SEUS on the balloon roadmap. The Balloon Roadmap team identified a high-priority need for increased capability for Long-Duration Balloon flights. The long-duration balloon flights (and future ultra-long duration balloon flights) have grown too large and complex to be accommodated in the SR&T program. At present, the only avenue is to compete as a Mission of Opportunity in the Explorer

competitions. The Balloon roadmapping team advocated a special line within the Explorer program for the balloons. However, since the balloon missions have successfully competed in the current framework, the OS did not endorse allocating Explorer funds exclusively for balloons and favors continuing to compete the balloons against other Explorer missions.

Roadmapping

The OS reviewed and discussed plans for the 2005 NASA roadmap. We are confident that the SEU and Origins roadmaps can be successfully melded into a joint "Universe" roadmap. With the compressed schedule, there is a concern that there will be little time for community interaction in the roadmapping process. The roadmapping teams will need to ensure that there are well-publicized opportunities to present roadmap outlines and elicit community response (e.g., at the AAS meeting in January).

Vision Missions

The leaders of various Vision Missions briefed the joint Origins and SEU Subcommittees on the interim results of their team studies. The range and scientific potential of these novel missions was very exciting. The OS thanks the team members for their efforts, which will provide useful input for the long-range planning in the roadmap. We encourage NASA headquarters to initiate similar studies in 2008 that will provide input for the NAS decadal survey process.

This is the last report of the OS. We look forward to working more closely with our SEU colleagues as part of the new Universe Subcommittee.

We look forward to working with Anne Kinney in her new role as Director of the Universe Division and with Al Diaz in his new role as Associate Administrator for Science. We want to thank Ed Weiler for his contributions as Associate Administrator and wish him success in his role as Director of Goddard Space Flight Center.

Sincerely yours,

David Spergel, for the Origins Subcommittee